
Appendix 15.1

**Key Assessment Assumptions,
Limitation of Assessment Methodologies
and Related Prior Agreement(s)**

Appendix 15.1 Key Assessment Assumptions, Limitation of Assessment Methodologies and Related Prior Agreement(s)

Assessment Methodologies	Key Assessment Assumptions	Limitations of Assessment Methodologies / Assumptions	Prior Agreements with EPD	
			EIA Study Brief Clause Reference	Relevant Document(s)
Air Quality Impact				
Construction Phase				
The air quality impact assessment (construction phase) for the Project follows Annex 4 and Annex 12 of the EIAO-TM and requirement from the EIA Study Brief (ESB-274/2014). Dust emission would be the major air quality impact and quantitative assessment has been carried out by Fugitive Dust Model (FDM).	<p>The active construction area was assumed to be 100% of the Project site for both the short term (hourly and daily) and long term (annual) assessment.</p> <p>The prediction of dust emission was based on the typical values and emission factors obtained from USEPA AP-42.</p> <p>The adopted dust suppression due to regular watering is 91.7%.</p>	<p>The dust emission of the actual site may vary from the adopted values.</p> <p>The extent of watering may vary depending on actual site conditions but constant removal efficiency is adopted during working hours.</p>	Section 3.4.3, Appendix A, and Appendix A-1	N/A
Operation Phase				
The air quality impact assessment (operation phase) for the Project follows Annex 4 and Annex 12 of the EIAO-TM and requirement from the EIA Study Brief (ESB-274/2014). The Project itself is not an air pollution source. During the operational phase, the only air emission source due to the Project is the induced traffic along the traffic routes leading to or from the future MPSC. PATH (Pollutants in the Atmosphere and their Transport over Hong Kong) model was used to predict the future background concentrations of air pollutants. Air dispersion model	Pollutant concentrations predicted by PATH in year 2020 had been adopted for the background air quality for the assessment year from 2023 (the worst assessment year) to 2036 (15 years after the commencement of the Project). Since PATH does not predict FSP concentration, the background daily and annual concentrations of FSP was predicted as 75% of RSP and 71% of RSP respectively according to EPD's "Guidelines on the Estimation of PM2.5 for Air Quality Assessment in Hong Kong".	<p>In consideration of air quality improvement schemes implemented by the government that would gradually take effect following year 2020, the use of 2020 PATH background in predicting pollutant concentration in years 2023 to 2036 was considered conservative.</p> <p>Based on the local and overseas operation experiences of stadia of a similar scale, it was envisaged that major events at the Main Stadium of MPSC, especially a full-house event, would not be held frequently.</p>	Section 3.4.3, Appendix A, and Appendix A-1	N/A

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CALINE4 (California Line Source Dispersion Model Version 4) was employed to predict the concentrations of air pollutants at the identified Air Sensitivity Receivers (ASR) due to tailpipe emissions from the existing and planned open road network within the Study Area; whereas ISCST3 (Industrial Source Complex Short-Term Model) was employed to predict the concentrations due to chimney, portal, ventilation building, cruise terminal and typhoon shelter. EMFAC-HK was employed to predict the hourly emission factors for 16 vehicle classes.	60 days full events per year were considered for the assessment of annual NO ₂ . According to the Permanent International Association of Road Congress Report (PIARC, 1991), the pollutants were assumed to eject from the portal as a portal jet such that 2/3 of the total emissions was dispersed within the first 50m of the portal and the other 1/3 of the total emissions within the second 50m.	As the model constraint of CALINE4 limits the road height to 10m, roads higher than 10m were set to 10m in model. The mitigation measures (such as entry restriction of heavy vehicles during peak hours) recommended in the EIA would help reduce the vehicular emission but their benefits are not easily quantifiable for the air modelling assessment.		
Hazard to Life				
The hazard to life assessment for the Project follows Annex 4 of the EIAO-TM and requirement from the EIA Study Brief (ESB-274/2014).	The assessment for hazard to life was based on desktop review, relevant surveys and available information from public domain including the approved EIA reports.	N/A	Section 3.4.4	N/A
Noise Impact				
Construction Phase				
The noise impact assessment (construction phase) for the Project follows Annex 5 and Annex 13 of the EIAO-TM, GW-TM and requirement from the EIA Study Brief (ESB-274/2014).	The analysis of the construction noise had been based on standard acoustic principles. No direction correction is applied. The SWL of the PME are adopt from EPD and/or catalog of the PME.	SWL of the PMEs may vary from the adopted values. Worst case assumptions have been adopted.	Section 3.4.5 and Appendix C	N/A

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	<p>The distance attenuations were calculated based on the notional source position of each construction zones.</p> <p>A positive 3dB(A) façade correction was added to the predict noise levels.</p> <p>A 5dB(A) reduction for barrier and 10dB(A) reduction for shed/enclosure/silencer were applied to the predicted noise level.</p>			
Operation Phase				
The noise impact assessment (operation phase) for the Project follows Annex 5 and Annex 13 of the EIAO-TM, and requirement from the EIA Study Brief (ESB-274/2014).	The predicted traffic flow of Year 2036 was adopted in the traffic noise assessment.	Traffic noise were predicted based on the free flow condition. Traffic congestion and hence reduced traffic speed were not taken into consideration.	Section 3.4.5 and Appendix C	N/A
	<p>The noise generated from District Cooling System was based on the values provided by Project's building services engineer.</p> <p>The distance attenuations were calculated based on the notional source position.</p>	N/A		
	The noise from the loudspeakers and spectators was modeled by ray-tracing method based on the design of the Project.	Any significant changes of the stadium's design may affect the conclusion of the assessment.		

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	The data for the calibration of the noise model was based on measured noise level from similar activities in Hong Kong.			
Water Quality Impact				
The water quality impact assessment for the Project follows Annex 6 and Annex 14 of the EIAO-TM, and requirement from the EIA Study Brief (ESB-274/2014).	N/A	N/A	Section 3.4.6 and Appendix D1	N/A
Sewerage and Sewage Treatment Implication				
The sewerage and sewage treatment implication assessment for the Project follows Annex 14 of the EIAO-TM, and requirement from the EIA Study Brief (ESB-274/2014).	Sewage arising from the MPSC was estimated from the predicted population.	N/A	Section 3.4.7 and Appendix D2	N/A
Waste Management Implication				
The waste management implication assessment for the Project follows Annex 7 and Annex 15 of the EIAO-TM, and requirement from the EIA Study Brief (ESB-274/2014).	Waste generate in the construction phase was determined based on the design of the Project. Waste generation in the operation phase was based on the estimated population.	Any significant changes of the work activities and waste generation from the project and the waste management proposal may affect the scope and extent of the assessment.	Section 3.4.8 and Appendix E1	N/A
Land Contamination				
The land contamination assessment for the Project follows Annex 19 of the EIAO-TM, and requirement from the EIA Study Brief (ESB-274/2014).	The assessment was based on the site boundary and historical land used.	N/A	Section 3.4.9	N/A
Ecological Impact (Terrestrial)				

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The ecological impact (terrestrial) assessment for the Project follows Annex 8 and Annex 16 of the EIAO-TM, and requirement from the EIA Study Brief (ESB-274/2014).	N/A	N/A	Section 3.4.10 and Appendix F	N/A
Landscape and Visual Impacts				
The landscape and visual impact assessment for the Project follows Annex 10 and Annex 18 of the EIAO-TM, and requirement from the EIA Study Brief (ESB-274/2014).	The assessment for glare impact assumed direct line of sight between the observers and the light source.	N/A	Section 3.4.11 and Appendix G	N/A
Cultural Heritage Impact				
The cultural heritage impact assessment for the Project follows Annex 10 and Annex 19 of the EIAO-TM, and requirement from the EIA Study Brief (ESB-274/2014).	The assessment for cultural heritage impact assessment was based on desktop review, relevant surveys and available information from public domain including the approved EIA reports.	N/A	Section 3.4.12	N/A